

Life Along the Santa Cruz River

A 1st-3rd Grade Teacher's Guide

P.A.R.K.S.

Parks as Resources for Knowledge in Science

The Santa Cruz River, Its People and Environment

A 1st-3rd Grade Teacher's Guide

Principal Author and Editor

Roy B. Simpson, Park Ranger

Tumacácori National Historical Park

Graphics By

**Mary Simmie, Russ McCrackin, Vernon Barney
and Zackery Zdinak**



U.S. Fish and Wildlife Service

Acknowledgments

Special recognition to the following persons and organizations for their help with organizing, curriculum development and support:

To our sponsors, the Exxon Corporation and the National Park Foundation for providing the funds to make this worthwhile idea a reality, and for providing the funds to carry it out; the Tumacácori Mission Land Development Ltd. for allowing us access to and use of the river; the Kazaam Nature Store in Patagonia for their aid in purchasing quality binoculars; the U.S. Fish and Wildlife Service who provided funds through a Partners in Wildlife grant to fence and develop a ten-acre study site.

To Kara Myrick for her expertise, dedication and hard work in helping to design, edit and pilot this guide.

To all the editors, Anita Badertscher, Mary Connors and Don Garate, for their outstanding editing skills and the patience to work through this project's multiple drafts.

To Lou Patterson, Paul Speasl and Joan Sumner for their hard work in getting this project on the computer and learning the Quark program in order to accomplish this.

To Volunteers-in-Parks Anna Curfmann and Clar Speck for their enthusiasm, love for children and dedication to education. They bravely sang silly songs and developed and piloted the classroom slide show.

To Michael Alcala from the Santa Cruz County Health Department/HRSA, for his generous support and consultation related to river and health issues.

To second grade teachers at the San Cayetano and A.J. Mitchell Schools who kindly helped pilot the student activities and gave us frank feedback on how to improve the program.

To Ann Rasor, Don Garate and other park service staff who generated the support I needed and allowed me to put together this project, and for their support of the environmental issues and their commitment to education.

To Santa Cruz Valley unified School District No. 35 for its support, encouragement and permission to work with local schools.

And to the many others who provided valuable support and assistance in the preparation of this Guide, thank you.

**1st Printing November 2000
Tumacácori, Arizona**

**Whereas all activities may be photocopied for educational purposes,
please note that certain graphics are copyrighted and may not be
reproduced commercially without permission from the artist.**

TABLE OF CONTENTS



FOREWORD	i
HOW TO USE THIS BOOK	ii-iii
ARIZONA STATE STANDARDS	iv-vi
RESOURCES AND REFERENCES	vii-ix

UNIT 1: THE O'ODHAM



Introducing the O'odham

Students will learn about the O'odham culture through listening to a traditional story, participating in a simple O'odham language lesson and creating a craft "weaving" activity.

Page 1.5



Life in an O'odham Village

Students will learn about traditional O'odham village activities through a cut and paste project. They will discuss different ways the O'odham used their resources and then create sentences describing the different resource-related activities portrayed.

Page 1.11

UNIT 2: THE APACHE



The Story of the Apache People

Students will learn about the Apache People and their culture through listening to and reading an essay. They will summarize their reading by drawing a picture, then compose and answer questions regarding the assigned reading.

Page 2.3



The Apache Way

Through participation in one or more activities, students will experience their local environment first-hand while learning about how the historical Apache people related to nature.

Page 2.7

UNIT 3: THE MEXICAN-AMERICANS



Fiesta

Through the creation of a traditional fiesta, students will gain understanding of the Mexican-American people and culture. Activities include celebration, history, writing, music and food.

Page 3.5

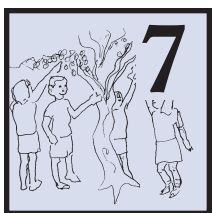


A Gift From Father Kino

Through listening to a story and by doing a matching activity, students will classify food items, compare and contrast "introduced" versus "native" goods and discuss how these goods both helped and hurt the Indians and the environment.

Page 3.11

UNIT 4: TREE OF LIFE



Dress a Tree

Students will participate in an art activity in which they will learn about different parts of a mesquite tree, their functions and uses.

Page 4.5



Mesquite House

Students will learn about the inhabitants of, and their relationship to, a mesquite tree while participating in a cut-and-paste art activity.

Page 4.9

UNIT 5: RIVER CRITTERS



Santa Cruz River Cards

Students will learn to identify and/or review the general characteristics of various mammals, birds, insects, arachnids, reptiles, and amphibians found along the Santa Cruz River.

Page 5.3



Santa Cruz River Bingo

Through playing bingo, students will learn to recognize and identify various mammals, birds, insects, arachnids, reptiles, and amphibians found along the Santa Cruz River based on their general characteristics.

Page 5.17

UNIT 6: "BASURA," ALIAS TRASH



Trash: Can We Live With It?

Students will participate in a simulation game that demonstrates the effect trash has on people and the environment.

Page 6.3

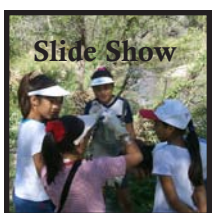


How Long Does Litter Last?

Students will be made aware of different types of pollution and the problems caused by litter and how to correctly dispose of it.

Page 6.5

CLASSROOM SLIDE SHOW PRESENTATION



The Santa Cruz River and Its People

Students will participate in an interactive ranger-led slide show. The presentation will take place in school classrooms and will emphasize natural history, cultures and how each influenced and affected one-another.

Page 7.1

Foreword

For many years, the Friends of the Santa Cruz River organization has been involved in environmental education efforts and has sponsored many events such as river day camps, tours, school presentations and clean up days. With further involvement and support from the staff at Tumacácori National Historical Park, more effort has been given to providing education regarding the river, resulting in on-going school programs. This partnership led to a generous grant from the Exxon-Mobil Corporation and the National Park Foundation, essentially forming a “marriage” between the park with its cultural resources, the Friends of the Santa Cruz River organization, and the river.

The grant is funding the creation of a curriculum under the program known as P.A.R.K.S. (Parks as Resources for Knowledge in Science) and is geared to local K-12 schools. The program is designed to teach students about the river’s ecosystem, the local historical cultures and their reliance on the river, and how they affected the environment. It is also designed to encourage respect and stewardship for the river and its resources. The full curriculum consists of activities for four grade levels: a second grade teachers’ guide and classroom slide presentation; a fourth-grade teachers’ guide, slide show and field-trip; a seventh-grade unit using birds as a theme to explore the area’s cultural and natural history; and a high school monitoring program studying the condition of and impacts upon the river.

The P.A.R.K.S. teachers' guide offers activities specifically focused on the Santa Cruz River and its local cultures. It has information, resources and activities that will inform and allow teachers to focus on the local environment and historically related cultures, and will enhance the study of science and history. Because it is locally based, it introduces students to the beautiful environs in our own back yard, and will be able to instill pride and appreciation for the place we call our home. The ultimate goal of the curriculum is to create informed future citizens that love and care for the place in which they live, for generations to come.

The Lessons in this guide cover aspects of the river and culture appropriate to second-grade level. The thematic skills included are: social studies, environmental science, multicultural education, art, and critical thinking. The teachers’ guide is grouped into six units, each with two lessons. Although each lesson can stand alone, they can also be used as introductory and follow-up activities. Consider using the first lesson in each unit to introduce themes and concepts and the second as a reinforcement or evaluation activity.

Note about this Guide

This teachers' guide is available free to schools, and for extended loan to all teachers in the following districts and schools: Santa Cruz Valley Unified School District No. 35 and Nogales Unified School District, and Continental, Little Red, Patagonia, Sahuarita, Sonoita, and Sopori elementary schools. Educators outside of this area may borrow the book at any time and photocopy any part of it. Copies are available at Tumacácori National Historical Park for the cost of copying.

For more information contact:

Tumacácori National Historical Park

P.O. Box 67, Tumacácori, AZ 85640

(520) 398-2341, extension 0

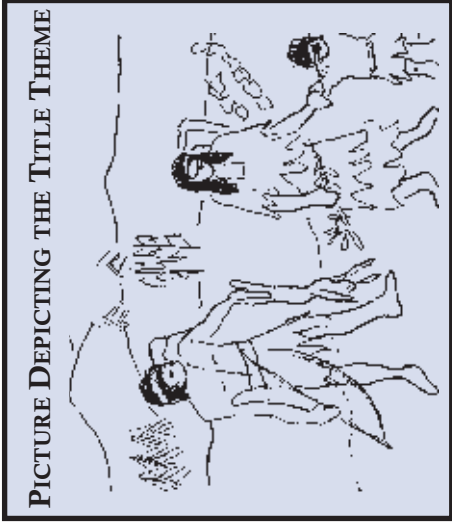
tuma_interpretation@nps.gov

or

www.nps.gov/tuma

HOW TO USE THIS GUIDE

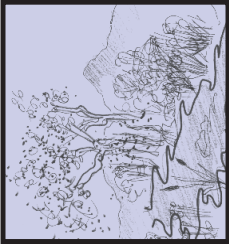
Units are Formatted as Follows:

UNIT NUMBER	
UNIT TITLE	
<div>PICTURE DEPICTING THE TITLE THEME</div> 	
<div>PICTURE DEPICTING THE LESSON</div>	<div>LESSON TITLE</div> <p>The first lessons of each unit will introduce students to the general theme and concepts.</p> <div>Page #</div>
<div>PICTURE DEPICTING THE LESSON</div>	<div>LESSON TITLE</div> <p>Follow-up lessons of each unit will emphasize unit theme and concepts, and may be used as an evaluation tool to assess students.</p> <div>Page #</div>

UNIT # - TEACHER BACKGROUND INFORMATION	
<p>The short introductions will give teachers the background information they will need in order to complete the lesson. It is by no means a complete study on the subject matter.</p>	<p>The Teacher Background Information is written for the teacher rather than the student. It <u>should not be read to students</u>, but rather, used to gain information that can be conveyed to the students during the lesson.</p>

HOW TO USE THIS GUIDE

Lessons are Formatted as Follows:



LESSON OVERVIEW

A brief outline of the general theme and concepts as well as a description to help accomplish the lesson. It is useful for scanning different lessons.

Subjects

Lessons are primarily science or social studies related, though other disciplines may be covered (art, etc.).

Standards

National Standards will be listed here, while Arizona State Standards will be listed on Pages v - vii.

Objectives

Measurable student outcomes.

Preparation

Includes a list of materials and steps needed to prepare for the lesson.

Time

The estimated amount of time it will take to complete the lesson.


Vocabulary

A list of key or foreign words.

LESSON TITLE

TEACHER BACKGROUND INFORMATION

1. Step by step instructions.
2. Numbered and clearly written.
3. Augmented by graphics and other useful information.



Enrichment

- Suggestions or other activities appropriate to further study lesson concepts or themes.
- Located at the end of the activity instructions.

Unit Title

Page 2.1 = Unit 2, Page 1

LESSON # - LESSON TITLE - MASTER PAGE #

MASTER PAGES

Master Pages contain activities that are essential to complete the lesson. In most cases, they are student worksheets and will need to be photocopied. Sometimes a teacher copy is sufficient.

Master Page 2.2 = Unit 2, Page 2

Unit Title

STATE OF ARIZONA - SCIENCE STANDARDS					
ACTIVITY	AZ State # 1 N.S.T.A. A SCIENCE AS INQUIRY	AZ State # 2 N.S.T.A. G HISTORY AND NATURE OF SCIENCE	AZ State # 3 N.S.T.A. F SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES	AZ State # 4 N.S.T.A. C LIFE SCIENCE	ARIZONA STATE SOCIAL STUDIES STANDARDS (See Page vi)
UNIT 1 1. Introducing the O'odham					History Economics
2. Life in an O'odham Village	1SC - R2, PO1 1SC - R3, PO1 1SC - F3, PO1		3SC - F3, PO1/2	4SC - R2, PO1 4SC - F1, PO1	History Geography Economics
UNIT 2 3. The Story of the Apache People	1SC - R2, PO1				History Geography Economics
4. The Apache Way		2SC - F2, PO1	3SC - F3, PO1/2		History
UNIT 3 5. Fiesta					History
6. A Gift from Padre Kino		2SC - F1, PO1	3SC - F3, PO1	4SC - F1, PO1/2	History
UNIT 4 7. Dress A Tree	1SC -R3, PO1 1SC -R6 PO1 1SC -F2, PO1/2 1SC -F4, PO1/PO2			4SC - F3, PO3/4	
8. Mesquite House	1SC -R2, PO1 1SC -R3, PO1 1SC -R6, PO1/2 1SC -F2, PO1 1SC -F4, PO1/2			4SC - R2, PO1 4SC - R3, PO1/2 4SC - F1, PO1 4SC - F4, PO2 4SC - F7, PO1/2	

STATE OF ARIZONA - SCIENCE STANDARDS

ACTIVITY	AZ State # 1 N.S.T.A. A SCIENCE AS INQUIRY	AZ State # 2 N.S.T.A. G HISTORY AND NATURE OF SCIENCE	AZ State # 3 N.S.T.A. F SCIENCE IN PERSONAL AND SOCIAL PERSPECTIVES	AZ State # 4 N.S.T.A. C LIFE SCIENCE	ARIZONA STATE SOCIAL STUDIES STANDARDS (See Page vi)
UNIT 5 9. Santa Cruz River Cards			3SC - F3, PO1/2	4SC - F3, PO1/2 4SC - F4, PO2 4SC - E1, PO1/2	
10. Santa Cruz River Bingo				4SC - R3, PO1/2 4SC - F4, PO2	
UNIT 6 11. Trash: Can We Live With it?			3SC - F2, PO1 3SC - F3, PO2	4SC - F1, PO1	
12. How Long Does Litter Last?			3SC - R1, PO2 3SC - F2, PO1 3SC - F3, PO2 3SC - F4, PO2	4SC - F1, PO1	
CLASSROOM SLIDE SHOW PRESENTATION Life Along the Santa Cruz River	1SC - R2, PO1 1SC - R4, PO1/2	2SC - F1, PO1	3SC - R1, PO1/2/3 3SC - F2, PO1/3 3SC - F3, PO1/2 3SC - F4, PO2	4SC - R1, PO1 4SC - R2, PO1/2/3 4SC - R3, PO1/2/3 4SC - F1, PO1/2 4SC - F3, PO1/2 4SC - F4, PO1/2	

STATE OF ARIZONA - SOCIAL STUDIES STANDARDS

ARIZONA STATE SOCIAL STUDIES STANDARDS	LESSON 1 INTRODUCING THE O'ODHAM	LESSON 2 LIFE IN AN O'ODHAM VIL- LAGE	LESSON 3 THE STORY OF THE APACHE PEOPLE	LESSON 4 THE APACHE WAY	LESSON 5 FIESTA	LESSON 6 A GIFT FROM FATHER KINO
HISTORY	1SS - R1, PO1 1SS - F2, PO2 1SS - F3, PO1/3 1SS - E2, PO2 1SS - E3, PO1 1SS - E4, PO3	1SS - R1, PO1 1SS - F2, PO3 1SS - F3, PO1/2 1SS - E2, PO2 1SS - E3, PO1	1SS - R1, PO1 1SS - F2, PO3 1SS - F3, PO1/3 1SS - E2, PO2 1SS - E3, PO1 1SS - E4, PO3	1SS - F3, PO3 1SS - E2, PO2	1SS - R1, PO1 1SS - F3, PO1/3 1SS - E3, PO5/6 1SS - E4, PO3	1SS - R1, PO1 1SS - F3, PO1/3 1SS - E3, PO2/3/4 1SS - E4, PO3
GEOGRAPHY		3SS - F2 PO1 PO3 PO5 PO6	3SS - F2 PO2			
ECONOMICS	4SS - R1, PO1	4SS - R1, PO2	4SS - R1, PO1			

RESOURCES AND REFERENCES

Unit 1: The O'odham

A Pima Remembers, George Webb, U of AZ Press, 1959.

Hohokam Arts and Crafts, Barbara Gronemann, Southwest Learning Sources, 6440 Presidio Road., Scottsdale AZ 85254, 1994.

Of Earth & Little Rain, Bernard Fontana, University of Arizona Press, Tucson, 1989.

Papago and Pima Indians of Arizona, Ruth Underhill, The Filter Press, P.O. Box 5, Palmer Lake, CO 80133, reprinted 1979.

Pima Indian Legends, Anna Moore Shaw, University of Arizona Press, Tucson, 1968.

Plants and People of the Sonoran Desert Trail, Desert Botanical Garden, Phoenix, AZ.

Sonora, Ignaz Pfefferkorn (translated by Theodore Treutlein), University of Arizona Press, Tucson, 1989.

The Encounters Box, Teachers' Resource Box, Tumacácori National Historical Park.

The Pima Indians, Frank Russell, University of Arizona Press, Tucson, reprinted 1975.

The Upper Pima of San Cayetano del Tumacácori, Charles C. Dipeso, The Amerind Foundation, Dragoon AZ, 1956.

Unit 2: The Apache

Books by Joseph Cornell, Dawn Publications, Nevada City, CA

Sharing Nature with Children (1979),

Listening to Nature (1987),

Sharing the Joy of Nature (1989),

Journey to the Heart of Nature (1994).

Indeh: An Apache Odyssey, Eve Ball, University of Oklahoma Press, 1980.

The Apaches: Eagles of the Southwest, Donald E. Worcester, University of Oklahoma Press, 1979.

The Apache Indians, Nicole Claro, Chelsea House Publishers, NY, 1992.

The Encounters Box, Teachers' Resource Box, Tumacácori National Historical Park.

The Flute Player: An Apache Folktale, Michael Lacapa, Northland Publishing, Flagstaff, AZ, 1990.

The People Called Apache, Thomas E. Mails, BDD Books, NY, 1974.

Western Apache Material Cultural, Alan Ferg, University of Arizona Press, Tucson, 1987.

When The Earth Was New, Chesley Goseyun Wilson, World Music Press, PO Box 2565, Danbury, CT 06813, 1994.

Unit 3: The Mexican Americans

California's Hispanic Roots For Kids, Barbara Linse with George Kuska, Art's Publications, 80 Piedmont Court, Larkspur, CA 94939, (415) 924-2633.

Chilies to Chocolates, Foster & Cordell, University of Arizona Press, Tucson,

AZ, 1992.

Crafts of Mexico, Chloe Sayer, Doubleday and Company, Inc., NY, 1977.

Cuentos - Tales from the Hispanic Southwest, Jose Griego y Maestas and Rudolfo A. Anaya, Museum of New Mexico Press, 1980.

Fiesta! Mexico and Central America, Barbara Linse and Dick Judd, Fearon Teacher Aids, A Paramount Communications Company, 1993.

Folk Wisdom of Mexico, Jeff M. Sellers, Chronicle Books, San Francisco, 1994.

Kids Explore America's Hispanic Heritage, Westricge Young Writers Workshop, John Muir Publications, Santa Fe, NM, 1992.

Mexican Folk Toys, Festival Decorations, and Ritual Objects, Florence and Robert Pettit, Hastings House Publisher, NY, 1976.

Seeds of Change: The Story of Cultural Exchange after 1492, Sharryl Davis Hawke and James E. Davis, Addison-Wesley Publishers, 1992.

Spanish-American folktales, Teresa Pijoan de Van Etten, August House Publishers, Inc., Little Rock, AR, 1990.

The Mexican-Americans, Julie Catalano, Chelsea House Publishers, NY, 1996.

The Story of Mexico: La Historia de Mexico en Español y en Inglés, Bellerophon Books, 122 Helena Ave., Santa Barbara, CA 93101, (805) 965-7034, 1996.

The Tortilla Book and Mexican Regional Cooking, Diana Kennedy, Harper and Row, NY, 1975.

Vamos a Cantar, Corvelan, Folkway Records, NY.

The Encounters Box, Teachers' Resource Box, Tumacácori National Historical Park. Teacher/student resources and activities relating to local are history, culture and environment.

Unit 4: Tree of Life

The Banana Slug String Band, (888) 32-SLUGS, slugs@bananaslugstringband.com

Conocer un Arbol, Roy Simpson, Honduras, 1990, roy_simpson@nps.gov.

Project Learning Tree, 1111 19th Street, Washington, D.C., 20036 or contact Jill Rubio, (520) 752-9591, extension 22, jrubio@ag.arizona.edu.

Unit 5: River Critters

A Natural History of the Sonoran Desert, Arizona-Sonora Desert Museum, University of California Press, Berkeley, Tucson and Berlin, 2000.

Birds: A guide to Field Identification of North America, Chandler S. Robbins, Bertel Bruun and Herbert S. Zim, Golden Books, New York, 1966.

Books by Joseph Cornell, see Unit 2, page ix.

Easy Field Guide to Common Desert Birds, Richard and Sharon Nelson, Primer Publishers, 5738 N. Central Avenue, Phoenix, AZ, 1996.

Field Guide to the Birds of North America, National Geographic Society, 1987.

Mammals of the Southwest Deserts, George Olin and Dale Thompson, Southwest Parks and Monuments Association, 1988.

Project Learning Tree, see Unit 4, page x.

Ranger Rick's Nature Scopes, National Wildlife Federation, Washington DC.

Watchable Birds of the Southwest, Mary Taylor Gray, Mountain Press Publishing Company, Missoula, MT, 1995.

What's a Chiricahua and Chiricahua: Much More Than You Think, Chiricahua National Monument, Wilcox, AZ, 1993, (520) 824-3560, 1993.

Unit 6: Basura - Alias Trash

A Sanitary Code, Rules and Regulations, Solid Waste, Chapter VII, pg. 140-143, Santa Cruz County Health Department, Nogales, AZ 85621, (520) 761-7800.

Project WET, Contact Kerry Schwartz, University of Arizona, (520).752-9591.

Project Learning Tree, 1111 19th Street, Washington, D.C., 20036 or contact Jill Rubio, (520) 752-9591, extension 22 - jrubio@ag.arizona.edu.

Ranger Rick's Nature Scope, National Wildlife Federation, Washington, D.C.

Biological Diversity Curriculum, National Park Service, Midwest Region.

Arizona State Government Water Resources, (520) 761-1814.

Arizona State Parks, Tubac Presidio State Historical Park, (520) 398-2252.

Friends of the Santa Cruz River, P.O. Box 4275, Tubac, AZ 85646, (520) 398-8269.

Household Hazardous Waste Program, Office of Public Works, Santa Cruz County, Nogales, AZ 85621, (520) 761-7800.

National Park Service, Tumacácori National Historical Park, PO Box 67, Tumacácori, AZ, 85640, (520) 398-2341.

Nogales Chamber of Commerce, Nogales, AZ 85621 (520) 287-6570.

Nogales Wastewater Treatment Project, 777 N. Grand Ave., Nogales, AZ 85621, (520) 287-6571.

Tubac Chamber of Commerce, Tubac, AZ 85646, (520) 398-2704.

U.S. Fish and Wildlife Service, Phoenix, AZ (520) 823-4251;

U.S. Forest Service, Nogales, AZ, (520) 281-2297.

Other Useful Resources

Arizona Association for Living in out the Environment (AALE), 602/786-9969.

Arizona Department of Agriculture, (520) 287-7887.

Arizona Department of Environmental Quality, (800) 234-5677.

Arizona Department of Health Services, (800) 221-9968.